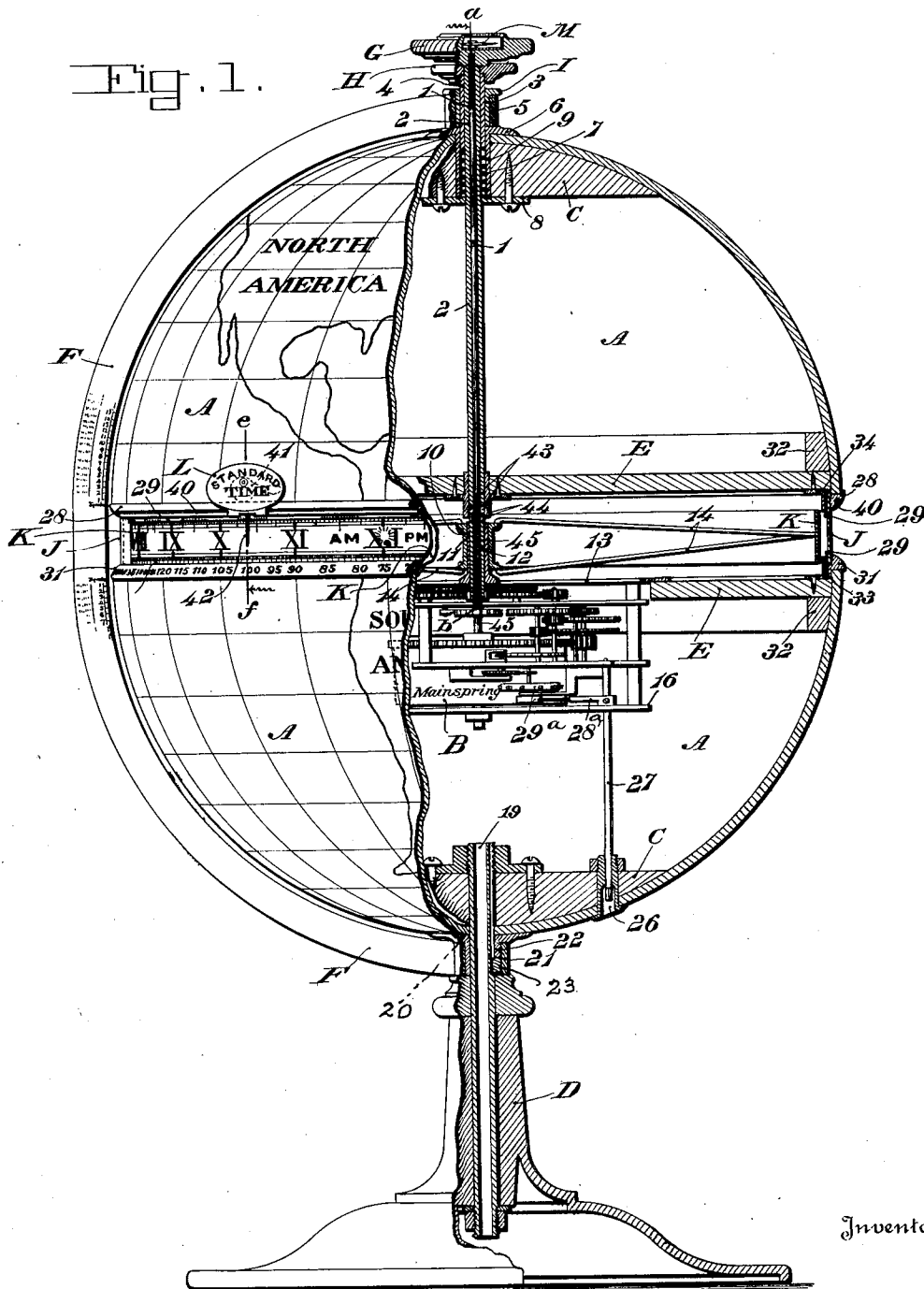


G. W. RAMAGE.
GEOGRAPHICAL TIME GLOBE.
APPLICATION FILED SEPT. 11, 1914.

1,152,904.

Patented Sept. 7, 1915.
2 SHEETS—SHEET 1.



Inventor:

Witnesses:
Harry King
W. E. Rathbone

George Wood Ramage
By *Albert K. Ramage*

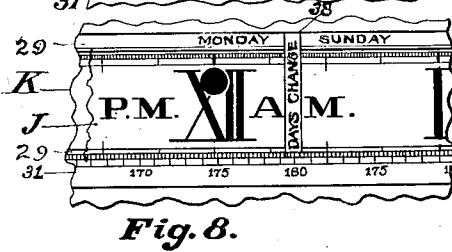
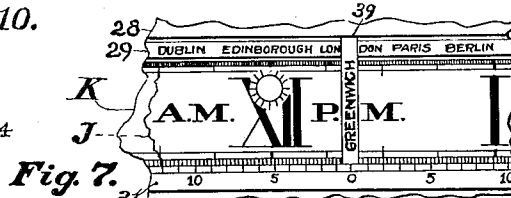
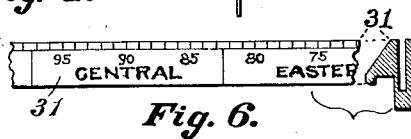
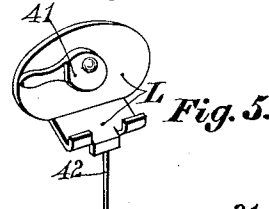
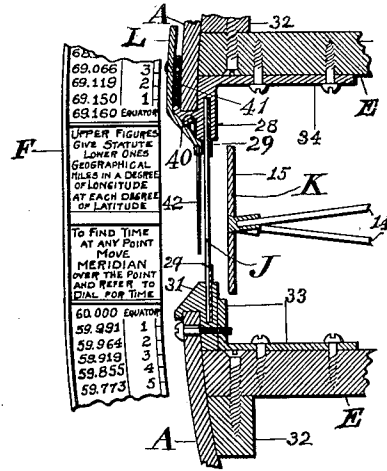
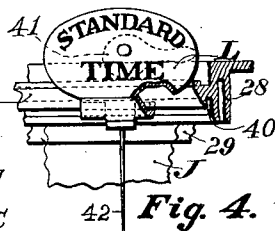
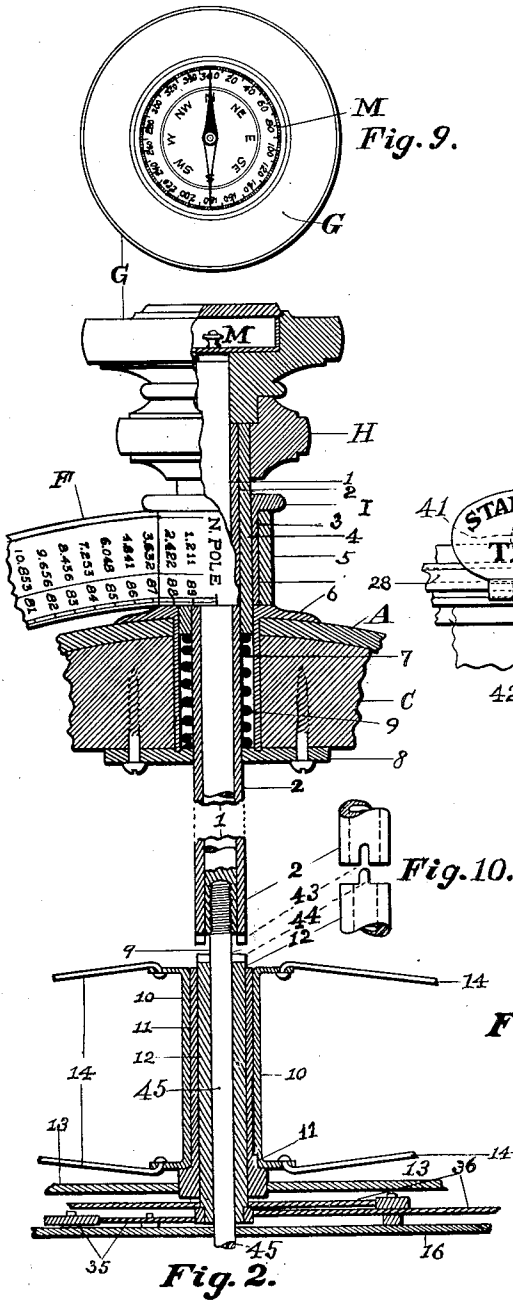
Attorneys

G. W. RAMAGE.
GEOGRAPHICAL TIME GLOBE.
APPLICATION FILED SEPT. 11, 1914.

1,152,904.

Patented Sept. 7, 1915.

2 SHEETS—SHEET 2.



Witnesses:

William C. Hall
Jacob J. Brunsburg

George Wood Ramage Inventor
Robert V. Adams

Attorney

UNITED STATES PATENT OFFICE.

GEORGE WOOD RAMAGE, OF CLEVELAND, OHIO.

GEOGRAPHICAL TIME-GLOBE.

1,152,904.

Specification of Letters Patent.

Patented Sept. 7, 1915.

Application filed September 11, 1914. Serial No. 861,174.

To all whom it may concern:

Be it known that I, GEORGE WOOD RAMAGE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented or discovered certain new and useful Improvements in Geographical Time-Globes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention comprises certain improvements on the geographical time globe covered by my Patent No. 664,289, dated Dec. 18, 1900, whereby the time globe is rendered more convenient and durable in use.

The present invention relates more particularly to means for winding the clock-work which drives the rotary dial; to means for setting the dial; to means for holding the transparent band or crystal at the equator of the globe and for protecting the edges of the hemispheres; to means for bracing the larger parts of the hemispheres and holding them in shape; to a movable index or pointer which takes the place of the long indexes or pointers heretofore used; to an annular band or bands, inside of the transparent band, for containing matter to be exhibited; to a movable meridian index plate, and to means for regulating the clock from outside of the globe, as will hereinafter be fully set forth.

In the accompany drawings Figure 1 is an elevation, partly in vertical section, of the improved globe; Fig. 2 is a broken sectional elevation, on line *a*, Fig. 1, of the upper half of the globe. Fig. 3 is a detail section at the middle part of the globe in the plane of the radius of the latter, as on line *e-f*, Fig. 1. Fig. 4 is a detail view of a movable index carrier and adjacent parts, and Fig. 5 is a back view of the index carrier shown in Fig. 4. Fig. 6 is a detail elevation and section of one of the rims in which the transparent band outside of the movable dial is mounted. Figs. 7 and 8 are detail views showing parts of the transparent band and the rims in which the same is mounted, with a portion of the movable dial appearing through said transparent band. Fig. 9 is a plan view showing a magnetic compass set in the top of the head of the winding stem. Fig. 10 is a detail view showing the coupling parts of the setting stem in uncoupled position.

Referring to the drawings, A denotes a hollow globe consisting of two hemispherical

parts bisected on the equator with an interval between them, as in the globe of my patent above referred to, the said globe being supported by a base or pedestal D which receives a hollow tube 19 rotatably mounted on a vertical axis, but may be stationary, if desired. Within the top and bottom parts of the globe A, and attached thereto in any suitable manner, are disks C, C, which are convex at their outer sides so as to fit the inner concave surface of the globe A, these disks serving to strengthen the globe and to afford means for attaching the parts thereto, or connecting such parts therewith. If, however, the globe be made sufficiently thick these strengthening disks will not be necessary.

The two parts or hemispheres of the globe are separated at the equatorial part thereof by a transparent band or annular crystal J the edges of which are received in grooved rims 28 and 31 which are attached by angle pieces 34 and 33 to two disks E, which are fitted closely to the inner walls of the upper and lower hemispheres of the globe A and serve to hold the walls of said hemispheres rigidly in circular form. Said disks also serve as means for mounting other parts thereon. These disks will preferably be attached by screws to blocks or bands 32 securely attached to the inner walls of the upper and lower hemispheres.

A clock-work movement, comprising a main spring B and suitable gearing, is supported from the lower disk E, the framework of the clock-work movement comprising plates 13 and 16. As the clock-work mechanism does not of itself form any part of the present invention, and may be of any suitable construction, it is not shown in detail, and need not be further described, excepting so far as may be necessary to understand the present improvements.

Attached to the upper disk C is a plate or disk 8 having an annular recess on its upper side to receive the lower end of a sleeve 9 having a flange or collar 6 resting on the upper surface of the globe A. (See Fig. 2.) Resting on the flange or collar 6 is a sleeve 3, said sleeve 3 having a flange or cap I.

G represents a winding knob or head which will preferably be formed hollow at its upper side for the reception of a magnetic compass M, and attached to said knob or head is a rod 1 extending downward through a tube 2, the said rod having at its

lower end a threaded hole to receive the upper end of a winding stem or post 45 connected with the main spring B, for the purpose of winding up such spring when necessary.

To the upper end of the tube 2 is attached a setting knob or head H, and surrounding the upper part of the said tube 2 and rigid with the said setting knob or head H is a tube 4 resting on a spiral spring 7 housed within a tube 9, said spring in turn resting on a plate 8 which centers the tube 2. The spiral spring 7 normally holds the parts up in the positions shown in Fig. 2, but when the said knob or head H is depressed against the lifting stress of the said spring 7 the lower end of the tube 2, which is provided with notches 43, (see Fig. 10) will be forced into clutching or coupling engagement with the lugs 44 on the upper end of a setting sleeve 12. Encircling the sleeve 12 is a sleeve 11 of the hour gear clock movement, which is made to make one revolution every twenty-four hours, and mounted on the said sleeve 11 is a hub 10 of a dial wheel consisting of an annular dial K movable inside of the transparent band J, said dial K being connected by wire spokes 14 with the said hub 10, after the manner of a bicycle wheel, and bearing upon its face the various units of time in twenty-four hours. (See Figs. 7 and 8). The hub 10 of the dial wheel is fitted to the hour-gear sleeve 11, to revolve therewith, in any suitable manner. When it is desired to set the annular dial the knob or head H will be depressed to force the tube 2 downward into coupling engagement with the sleeve 12, and said dial may then be set by rotating said knob or head H while the said tubes are held in coupling engagement.

F denotes a movable metallic meridian plate provided at its top and bottom with ears 5 and 21. The upper ear 5 encircles the sleeve 3 and the lower ear 21 encircles a sleeve 22 which is provided with a flange 20 attached to globe A and made to revolve with it and the pivot tube 19, said sleeve being connected with said pivot tube 19 by means of a key 23. This metallic meridian is arranged in close proximity to the globe A and is provided with marks and figures to indicate the number of the degrees of latitude from the equator of the globe both up and down, or north and south, and is also provided with figures denoting, in whole numbers and fractions, the number of statute and geographical miles contained in a degree of longitude at each degree of latitude, its use being to locate the latitude and longitude of points on the globe, and by their longitude ascertain their time on the dial K, and through statute and geographical miles given thereon to measure the diameter, circumference or other distance on the surface of the globe, and ascertain the speed of

rotation of the earth on its axes at any given degree of latitude. This meridian F is adjustable circularly of the globe, as will be understood, so that it may be moved to any desired position relative to the globe, or the globe may be rotated to any desired position relative to the meridian, to bring any part of the globe into register with or beneath the said meridian.

J denotes a transparent band or crystal the edges of which are received in vertical grooves in metal rims or bands 28 and 31 attached to the proximate edges of the upper and lower hemispheres or parts of the globe, said transparent band or crystal encircling the rotating dial K driven by the clockwork mechanism. These rims 28 and 31 are provided with vertical grooves receiving the edges of the hemispheres and thus also serve as shields for protecting the said edges.

On the upper rim 28 is slidably mounted a carrier L having an index or pointer 42 which may be moved to any desired position, and said carrier L may be fixed in place on the said rim 28 by means of a cam lever 41, the said rim 28 being provided with a groove 40 into which a portion of the said index carrier L may extend, its use being to mark or indicate the time and place where the clock is in use or the longitude and time of a ship at sea. This carrier L may be made in any desired form and be duplicated to any desired number in order to mark or indicate standard and local time at a place where the clock is used, or may be used for any other purpose desired.

In the vertical groove of the rim 28 which receives one edge of the transparent band J is preferably inserted a band 29 which extends below the lower edge of the rim 28 far enough to be observed through the transparent band J, and on the outer surface of the said band 29 may be printed the names of different cities, as shown in Fig. 7, or other points on the globe with their longitude, the use of said band being a ready reference to the longitude and time of principal points around the globe, without reference to the map, or any other matter which may be desirable may be substituted for names of cities and other points around the globe on the said band 29. Also in the vertical groove in the lower rim 31 which receives the lower edge of the transparent band J is preferably inserted another band 29 extending above the said rim 31 so that the upper edge of the said band 29 may be provided with gage marks or any other matter which it may be desired to have read through the transparent band J.

Extending between the said rims 28 and 31, as shown in Figs. 7 and 8, are metallic plates 38 and 39 which may be located diametrically opposite on the globe, the plate 39 denoting the longitude or meridian of

Greenwich and the plate 38 on the opposite side of the globe denoting where the days of the week and dates of the month change at the one hundred and eightieth degree of longitude east and west from Greenwich, or the international date line. Both of said plates 39 and 38 may be used or only one, as may be desirable.

The rim 31 is preferably provided with gage marks indicating the degrees of longitude, properly numbered, east and west from Greenwich or any other point on the globe that may be desired, and is also preferably divided into sections indicating the standard hour-belts as now used in the Western Hemisphere, and known respectively as Colonial, Eastern, Central, Mountain and Pacific, also in the Eastern Hemisphere, and known respectively as Greenwich, Central, European, etc. (See Fig. 6).

To enable the clock to be regulated from the outside of the globe A the latter is preferably provided with a hole or key-seat 26 receiving a regulator stem 27, provided with a regulating arm 28^a to engage the hair-spring of the balance wheel 29^a so as to regulate the clock-work movement in a well known manner.

Having thus described my invention I claim and desire to secure by Letters Patent:

1. In a geographical time globe, the combination with a rotary dial, of a clock-work mechanism for driving said dial, and a setting device for said dial outside of said globe, and comprising a head, a setting tube located concentric with the axis of said globe, a sleeve arranged concentric with the axis of said dial, said tube and sleeve being adapted to be coupled together, and a spring for normally holding the coupling parts separated but which will yield to manual pressure when the dial is to be set.

2. In a geographical time globe, the combination with a rotary dial, of a clock-work mechanism for driving said dial, a winding rod for said clock-work operable from the outside of said globe, a setting tube for

said dial also operable from outside of said globe, said rod and tube being both arranged concentric with the axis of said globe, a sleeve also arranged concentric with the axis of said globe and adapted to be coupled with said tube, a spring for normally holding the coupling parts separated but adapted to yield to manual pressure when the dial is to be set.

3. A geographical time globe consisting of two hemispherical parts the adjacent or proximate edges of which are provided with annular metal rims having vertical grooves receiving said edges and having also, inside of said edges, other vertical grooves, combined with an equatorial transparent band the edges of which are received in said last-named grooves.

4. A geographical time globe consisting of two hemispherical parts the adjacent or proximate edges of which are provided with annular metal rims having vertical grooves receiving said edges and having also, inside of said edges, other vertical grooves, combined with an equatorial transparent band the edges of which are received in said last-named grooves, and a band or bands inserted in one or both of said last-named grooves and having matter thereon observable through said transparent band.

5. A geographical time globe consisting of two hemispherical parts the adjacent or proximate edges of which are provided with annular metal rims having vertical grooves, combined with an equatorial transparent band or crystal the edges of which are received in said grooves, an adjustable index device movably mounted on one of said rims, and means for securing said index in any desired position.

In testimony whereof I affix my signature, in presence of two witnesses.

GEORGE WOOD RAMAGE.

Witnesses:

ALTON H. BEMIS,
F. E. LIPP.